

Claims:

1. A process for separating 2-butanol from an industrial mixture which comprises 2-butanol, tert-butanol and water, wherein the proportion by mass of water is greater than the
5 limit concentration of the distillation boundary line connecting an azeotrope of tert-butanol and water; and an azeotrope of 2-butanol and water, comprising

adding tert-butanol to the industrial mixture to reduce the concentration of water such that the proportion by mass of water is less than the limit concentration of the distillation boundary line connecting an azeotrope of tert-butanol and water; and an azeotrope of 2-butanol and
10 water; and

separating the mixture by distillation into a stream comprising 2-butanol and a stream comprising tert-butanol and water.

2. The process as claimed in claim 1, wherein the tert-butanol is added in a stream, which
15 has a water content of less than 12% by mass.

3. The process as claimed in claim 2, wherein the tert-butanol is added in a stream, which has a water content of less than 5% by mass.

20 4. The process as claimed in claim 1, which further comprises removing water from the industrial mixture in a column before adding the tert-butanol.

5. The process as claimed in claim 1, which further comprises adding a part of the stream comprising tert-butanol and water to the industrial mixture.

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6. The process as claimed in claim 1, wherein the industrial mixture has a water content of less than 10% by mass, based on the concentration of tert-butanol, 2-butanol and water in the industrial mixture.

5 7. The process as claimed in claim 1, wherein the stream comprising 2-butanol obtained after separating the mixture comprises less than 1% by mass of tert-butanol.

8. The process as claimed in claim 1, wherein the stream comprising 2-butanol obtained after separating the mixture comprises less than 0.5 % by mass of tert-butanol.

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9. The process as claimed in claim 1, wherein the separating of the stream comprising 2-butanol comprises taking a vapor phase of a vaporizer of a column; or a gaseous or liquid as a side stream in a stripping section of the column.

15 10. The process as claimed in claim 9, which further comprises removing water from the industrial mixture in a column before adding the tert-butanol; wherein the column for removing water from the industrial mixture is operated at a different pressure than the column for separating the stream comprising 2-butanol.

20 11. The process as claimed in claim 1, wherein the proportion of water in the industrial mixture is less than 11% by mass when the concentration of 2-butanol is from 0.0001 to 6% by mass.

25 12. The process as claimed in claim 11, wherein the proportion of water in the industrial mixture is less than 10% by mass.

13. The process as claimed in claim 11, wherein the proportion of water in the industrial mixture is less than 9.5% by mass.

5 14. The process as claimed in claim 1, wherein the proportion of water in the industrial mixture is less than 14 % by mass when the concentration of 2-butanol is from 6.01 to 15% by mass.

10 15. The process as claimed in claim 14, wherein the proportion of water in the industrial mixture is less than 13 % by mass.

16. The process as claimed in claim 1, wherein the tert-butanol is added in a stream and wherein the stream comprises from 90 to 99.99% tert-butanol.

15 17. 2-butanol prepared by the process of claim 1.